PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Gaidjiergis et al.

Application No.: 10/039,064	Confirmation No.: 3578
Filed: January 4, 2002	Art Unit: 1732
For: Methods And Apparatus For Manufacturing Fiber-Cement Soffits With Air Vents	Examiner: P. Butler

DECLARATION of JOHN T. WHITEHEAD UNDER 37 C.F.R. § 1.132

Mail Stop Amendment
Commissioner for Patents
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Sir:

I, John T. Whitehead, hereby declare and state:

1. I have been a shareholder of PacTool International, Inc. (PacTool) since 1994 and am currently a Vice President and the Director of Research and Development of PacTool. As a shareholder of PacTool, I have been involved with the fiber-cement industry since 1994, and I have been directly aware of the devices and processes disclosed in U.S. Patent Application No. 10/039,064.

2. I have 34 years of experience building and maintaining machines that cut, punch, fold and paste paper products, and I have approximately 14 years of experience designing, building, testing and/or maintaining machines related to cutting and punching cured fiber-cement boards and panels.

3. PacTool International has developed machines and processes for cutting cured and primed fiber-cement boards and panels to produce fiber-cement soffit coated with a primer.

4. James Hardie Building Products, Inc. (Hardie) determined that drilling holes through cured fiber-cement panels was not a viable option for producing finished soffit from cured fiber-cement panels. To the best of my knowledge, Hardie subsequently asked PacTool to design and develop equipment and processes to produce soffit with vent holes from cured and primed fiber-cement panels.

5. The fiber-cement panels used in the claimed processes are cured and primed to remove water from the panels before producing soffit because, as we understood from Hardie, coating fiber-cement material with primer after forming the vent holes would often result in the vent holes being obstructed or even fully blocked by the primer. Therefore, the moisture content of the fiber-cement panels used in the claimed processes must be low enough to accept a primer coating. Additionally, to work in the claimed processes, the fiber-cement panels have a low moisture content and are dimensionally stable so that an active drive mechanism, such as rollers and/or belts, can directly engage and drive the fiber-cement panels over the surface of the support in which the die holes are located. The cured fiber-cement panels used in the claimed processes are a fiber-cement composition that has been "pressed, cured and then cut into panels." (Paragraph [0002], lines 11-13, of U.S. Patent Application Publication No. US2002/0109257 A1.) The cured fiber-cement panels from which fiber-cement soffit is made in accordance with the claimed processes is such that drilling the panels or cutting the panels with a rotating abrasive disk produces dust. (Paragraph [0004], lines 4-7, and paragraph [0029], lines 4-6, of U.S. Patent Application Publication No. US2002/0109257 A1.)

6. The active drive mechanisms used to drive the cured fiber-cement panels through the punches/dies in the claimed processes are not suitable for directly engaging uncured filamentary mats with hydraulic binders because the active drive mechanisms would deform the uncured filamentary mats and would not be able to accurately position the uncured filamentary mats between the punches and dies.

7. Because the cured fiber-cements panels used in the claimed processes can be driven directly by active drive mechanisms, they are not supported by a separate tray that moves with the fiber-cement panels through the punching tool.

8. U.S. Patent No. 3,962,941 issued to Kober (Kober) teaches punching holes through uncured filamentary mats 3 with a hydraulic binder. A person skilled in the art would understand that Kober's filamentary mat 3 is uncured, and therefore limp, such that Kober's mat 3 must be supported by a moving tray 7 to maintain the shape of the mat 3. Further evidence that Kober's filamentary mats 3 are uncured is that the moisture content of Kober's filamentary mats 3 is sufficiently high to require a vacuum pump 27 to remove the liquid expressed from the hydraulic binder and the fiber forming the mats 3 during punching, and also because the filamentary material of Kober's mats 3 can extrude between the holes in the trays and the tubes of the dies as noted at column 2, lines 17-26 and 58-64. Kober's mats 3, therefore, are an uncured material that is limp and deformable.

9. A person skilled in the art would understand that Kober's uncured filamentary mats 3 cannot be adequately supported on the upstanding tubes 18 of the lower platen 5 that define the dies without using Kober's inventive tray 7. More specifically, Kober's tray 7 is necessary for punching holes through Kober's uncured filamentary mats 3 because the uncured filamentary material would otherwise deform during the punching process and the mats could not be readily removed from the dies.

10. A person skilled in the art would further understand that the punches 10 disclosed in Kober need to pass completely through Kober's uncured mats 3 because passing the punches 10 through only a portion of the thickness of Kober's mat 3 would not form holes completely through the mats 3. The properties of Kober's uncured mats 3 are significantly different than the cured fiber-cements panels provided in the claimed processes. As such, to the best of my knowledge, if the punches 10 disclosed in Kober did not pass completely through the uncured mats 3, then the waste material would not be fully ejected from the mats 3. More specifically, Kober inherently requires the punches 10 to pass completely through the mats 3 because (a) the material of Kober's mat 3 would be compressed and partially extruded into the tubes 18 without being fully ejected from the uncured mats 3 if the punches 10 did not pass completely through the mats 3, (b) Kober's trimming blades 25 and punches 10 are the same length and pass completely through the uncured mats 3 until the punches reach the top of the bores 11 of Kober's tubes 18, and (c) the last element of claim 1 of Kober requires pressing the punch pins through the mats, through the holes in the trays that support the mats, and into the

apertures of the dies. Kober does not otherwise expressly teach that the punch depth can be varied. Additionally, to eject waste material through the bores 11 of Kober's tubes 18, the downwardly flaring passages 19 require that the punches 10 pass completely through the uncured filamentary mats 3. More specifically, because the filamentary mats 3 are not cured, the mats would compress under the pressure of the punches 10 and the waste material would expand as it entered the flared passages 19. A person skilled in the art would understand that Kober's waste material would clog the flared passages 19 if Kober's punches 10 did not pass completely through the filamentary mats 3. As such, Kober teaches and inherently requires that the punches pass completely through the mats 3 for effective operation of Kober's process, and furthermore Kober is silent as to varying the punch depth. A person of ordinary skill in the art, therefore, would understand that Kober does not recognize punch stroke penetration depth as a result-effective variable for at least the reason that if the Kober's punches did not pass completely through Kober's uncured mats, then it would be likely that all of the holes would not form completely through Kober's uncured mats 3.

11. The Examiner's assertion that Kober indirectly teaches passing the punches through only a portion of the mat thickness based on column 3, line 65, to column 4, line 2, is also incorrect. Namely, the Examiner contends that Kober's punches 10 are slightly shorter than Kober's trimming blades 25 such that the punches 10 would not pass completely through the mats 3 when the trimming blades 25 engage the anvil strip 26. The drawings in Kober, however, are not machine fabrication drawings and do not include dimensions, but instead they are merely line drawings according to Patent Office requirements. Moreover, in Figure 3 for example, the illustrated trimming blade 25 and punch 10 have an equal length of approximately 0.85 inch from the bottom of member 9b as measured on a copy of Figure 3 printed directly from www.uspto.gov .

12. Kober expressly teaches that the diameter of Kober's punches 10 and the diameter at the top of the bores 11 in the tubes 18 (also called nipples 18) must be equal to or substantially equal to each other as Kober. (Kober at column 2, lines 2-5, and column 3, lines 32-35.) Based on (a) my understanding of Kober's uncured filamentary mat 3, (b) the punching of uncured fiber-cement boards, and (c) shearing other wood-fiber materials (i.e., paper), if Kober used the claimed punch/die-hole clearances, then the punches would likely pull fibers from Kober's

filamentary mat 3 into the claimed clearance gaps between the punches 10 and the bores 11. Such "fiber pull" into the bores 11 would result in jagged or fuzzy edges around the holes at the backside of the mats 3. The pulled fiber may also curl or spring back into the holes formed in the mat 3 as the mat 3 is lifted from the lower platen 5. A person skilled in the art, therefore, would understand (a) that Kober does not recognize the clearance between the punches and the dies as a result-effective variable, and (b) the claimed punch/die clearances are not merely an optimization or design choice that could be implemented for Kober's device.

13. Kober's uncured mats 3 would be marred if biasing elements were pressed against the upper surface of the mats 3 during the punching process. In developing the claimed processes, PacTool discovered that biasing elements with high durometers marred the surface of even cured fiber-cement panels. PacTool accordingly developed biasing elements with compressibility properties that would not mar cured fiber-cement. Kober, on the other hand, teaches that the filamentary mats 3 are sufficiently deformable to extrude through the spaces between the openings of the tray and the tubes projecting from the lower platen. As such, Kober's filamentary mats 3 are sufficiently deformable that biasing elements, and particularly biasing elements for metal application, pressing into the mats would mar the surfaces of the mats 3 and leave ring-shaped depressions around the holes.

14. Based on my understanding of Kober, my experience with punching cured fiber-cements panels to produce finished fiber-cement soffit, and my experience with other wood-fiber products (i.e., paper), Kober's device and process for punching holes in uncured filamentary mats 3 would not be used to punch vent holes in cured fiber-cement panels that are in a state in which cutting the fiber-cement panels with a rotating abrasive disk would create dust (i.e., a cured state that is primed or ready to receive a coating of primer). First, as explained above in paragraph 10, a person skilled in the art would further understand that Kober teaches and requires the punches 10 to pass completely through Kober's mat 3, which causes delamination problems in cured fiber-cement panels. Second, for the reasons explained above in paragraph 11, Kober teaches and effectively requires a close tolerance between the diameter of Kober's punches 10 and the diameter of Kober's bores 11 that would not work for punching vent holes in cured fiber-cement panels to form finished soffit because such tight tolerances significantly increase the

amount of force required to punch the vent holes in cured fiber-cement, which in turn causes significant wear and/or breakage of the punches. Therefore, a person of ordinary skill in the art would not modify Kober to have the claimed punch/die-hole clearances and/or the claimed punch stroke lengths for the reasons explained above in paragraphs 10 and 11.

15. A person skilled in the art would not punch vent holes in the cured boards taught in U.S. Patent No. 4,580,374 issued to Quinnell (Quinnell) using the device and process taught in Kober because the close punch/die-hole clearances required by Kober and the full punch stroke length also required by Kober are not suited for punching holes through cured fiber-cement boards or panels as explained above in paragraph 14. Additionally, column 1, lines 15-28, of Quinnell cited by the Examiner merely teach that it is known to use a wooden soffit board with a plastic fascia sheet or sheets of other rigid materials such as asbestos cement. This portion of Quinnell, however, does teach that the wooden boards or asbestos cement sheets have vent holes, and it is not inherent that the boards are ventilated because fiber-cement soffit boards are manufactured without ventilation openings through the boards. Quinnell addresses the need for adequate ventilation at column 2, lines 25-45, and expressly teaches that the production of slots in the soffit board itself adds expense and is "unsatisfactory" in the context of low cost systems. Thus, the portion of Quinnell cited by the Examiner as teaching the use of vented soffit boards made from asbestos cement does not in fact teach that the boards are vented, but rather the portion of Quinnell that addresses ventilation teaches that it is unsatisfactory to form holes through the asbestos cement soffit boards.

16. I further declare that all statements herein made of my own knowledge are true, and that statements made on information or belief are believed to be true; and further, that the statements are made with the knowledge that the making of willful or false statements or the like is punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and may jeopardize the validity of any patent issuing from this patent application.

John T. Whitehead

John T. Whitehead

1/28/08

Date